

100 *Roadside
Wildflowers*
**of Southwest Uplands
in natural color**



Natt N. Dodge

Hints for Flower Photographers

"A love of flowers seems to be one of the better traits common to most humans. They are lovely to photograph because they don't run and hide or try to pose"
—Mary Lasswell

If your interest in wildflowers includes a yen to obtain satisfactory color photographs of them, the following "tips" may be helpful. (They apply also to cultivated flowers).

Movement is a major problem, and blossoms, especially those on long, slender stems, seem to be in constant motion stimulated by an ever-present breeze. Although a fast shutter helps somewhat in stopping movement, the practical solution is to be afield in the early morning when the air is most likely to be still. A flower picture blurred by motion is a complete flop!

Abrupt Changes in Light Intensity caused by small clouds passing over the sun are a source of irritation and may cause time-consuming waits for the sun to reappear. Some flower photographers use a booster flash which overcomes cloud shadows and permits a faster shutter speed thereby stopping motion. Clouds, in common with breezes, are less in evidence early in the day, another reason for morning field trips.

Depth of Field is desirable to assure that all parts of the picture, except the background, are in sharp focus. Use the smallest diaphragm opening consistent with the shutter speed that will stop motion. Taking advantage of improved color films with "faster" emulsions will help.

Closeups, including one or two blossoms and a bit of foliage, usually produce more revealing pictures than photographs of entire plants. Achievement of this goal requires the use of camera equipment that will focus on objects close to the lens.

Neutral, Uncluttered Backgrounds are a "must" in flower photography. You may carry backgrounds with you in the form of stiff cardboards tinted various colors. Black, gray, or blue are most effective, and the tints should be dull, not glossy, to avoid reflections. Such a card placed directly behind the blossom will accomplish wonders in giving prominence to the flower, especially if the background is in the shade and the blossom being photographed is well lighted. One way to obtain a dark background is to ask a companion to stand in such a position (sometimes you can do it yourself) as to cast a shadow on the ground, or foliage, behind the part of the plant being photographed. Blue sky makes a splendid background and may be used when it is possible to place your camera below the level of the subject.

Keep In Mind the foregoing hints and, with a little practice, you will develop procedures of your own. By exercising care, patience, and ingenuity you should be able to produce better pictures than many of those in this booklet. Good luck!

Roadside Wildflowers of Southwest Uplands



100 *Roadside
Wildflowers*
**of Southwest Uplands
in natural color**

Photography & Text

Natt N. Dodge

**SOUTHWEST PARKS AND MONUMENTS
ASSOCIATION**

Globe, Arizona

Copyright 1967 by the Southwestern Monuments Association. All rights reserved. No part of this book may be reproduced in any form without permission in writing from the publisher, except by a reviewer who may quote brief passages in a review to be printed in a magazine or newspaper.

Library of Congress Catalog Card Number: 67-30422

First Printing, 1967 — 20,000

Second Printing, 1970 — 20,000

(Southwest Parks and Monuments Association
Popular Series, No. 12)



Juniper Mistletoe (*Phoradendron juniperinum*)

Printed in the United States of America

Arizona-Messenger Printing Co. • Phoenix, Arizona

Introduction

The Southwest's Uplands

Higher than the hot, dry stretches of desert, but lower than the heavily forested and sometimes snow-covered mountain steeples lie the wooded foothills and gently sloping mesas, the "middle ground" of the Southwest. Much of this upland paradise lies between the elevational limits 4,500-7,500 feet above sea level. Nearly all of it is, or once was, covered with pigmy forests of pinyon pine and juniper trees, the latter popularly but inaccurately called cedar.

These wooded uplands, with their characteristic vegetation of the pinyon-juniper association, are found throughout much of northern New Mexico and Arizona, western Colorado, and parts of Utah and Nevada. They also occur sparingly in the mountains of western Texas and Oklahoma, southern California, and northern Mexico. Pinyon pine, although not the same species, is the state tree of both New Mexico and Nevada.

Annual precipitation in the pinyon-juniper belt, from 12 to 20 inches, comes as snow from December through March, and as spotty, sometimes drenching thunder storms in July and August. Temperatures, with occasional exceptions, stay within the zero to 100 degrees Fahrenheit limits.

When And Why Do Upland Flowers Bloom?

Although elevation, latitude, direction and degree of slope, shade and sunlight, soil composition (both physical and chemical), temperature, and use by livestock are all important factors in native plant growth; moisture, or lack of it, is probably the most important element in the Southwest that determines the extent and profusion and, to some degree the season of most bountiful bloom. As a case in point, the luxuriant growth of vegetation on shoulders of paved roads attests to the response of plants to the additional water provided by runoff from the moisture-impervious surfaces, a "fringe benefit" of modern highways. Following winters of light snowfall, the spring wildflower display may be disappointing. Not until summer brings afternoon and evening thunder showers do the sandy arroyos and pavement margins come alive with the yellow of sunflowers, snake-weed, sweet clover, and rabbitbrush, and the purple of verbenas and asters. Upland wildflowers normally reach their peak of mass display from mid-August to late September.

Identifying And Naming Wildflowers

"What is its name?" is usually the first question asked by the wildflower enthusiast upon encountering an unfamiliar blossom. Using a botanical key, the trained taxonomist finds little difficulty in "running down" any wildflower presented to him, but the ordinary blossom fancier has neither the key, the training, nor the patience to identify the bloom he finds. Realizing the need for a popular presentation, botanically trained Polly Mead Patraw, with the aid of the skilled flower book illustrator, Jeanne Russell Janish, published, in 1951, "Flowers Of The Southwest Mesas." This has proved to be a very useful and popular handbook. The demand for a color-illustrated booklet, however, stimulated the author to develop this all-color publication as an addition to, but by no means a substitute for, the Patraw-Janish booklet. Used together, these publications provide a helpful field guide. In addition, the author's two booklets

dealing with the wildflowers of the Southwest deserts may be used effectively with the mesa and uplands booklets, as may the publication by Leslie P. Arnberger, "Flowers Of The Southwest Mountains." Many of both the desert and mountain wildflowers, or closely related species, also grow in the pinyon-juniper belt, so, to avoid duplication, a number of upland species covered in the other publications have been omitted from this booklet. Also there are many additional upland flowers for which there is not space in this small publication.

About Wildflower Names

Nearly all wildflowers have two sets of names; a common name or names, and one scientific Latin name. In the Southwest, a plant may have an Indian name, a Spanish name, and perhaps several names in English. An English name may be the result of someone's attempt to pronounce an Indian or Spanish word, or it may be an appellation given many years ago to a blossom because of its resemblance, in the memory of a pioneer, to a familiar flower "back home." Obviously common names may lead to uncertainty and confusion. Scientific nomenclature in Latin provides positive identification, but is of little help to the botanically-untrained wildflower buff. Consequently, in this booklet, we have tried to include one or more of each plant's common names as well as its presently accepted Latin name. For scientific names we have followed the outstanding publication "Arizona Flora" by Kearney and Peebles; and for common names we have relied upon "Texas Plants, A Checklist and Ecological Summary" by F. W. Gould. Additional common names have been obtained from a number of sources (See References).

What Is A Weed?

The term "weed" usually refers to a plant for which mankind has not found a specific use, or whose presence in lawn, garden, or field interferes with the appearance, growth, or yield of useful plants. However, a plant that is obnoxious in one location may be highly desirable in another. For example, Kentucky bluegrass is widely favored in lawns, but becomes a real nuisance in a strawberry bed. Similarly, a serious agricultural pest, field bindweed, is noticeably attractive as a roadside wildflower. A weed, then, is a plant out of place as determined by the arbitrary standards of mankind. What may be a noxious weed from the farmer's viewpoint may have valuable curative powers in the hands of the Indian medicine man.

The Pinyon-Juniper Plant Association

Since the presence of pinyon pines is used in this booklet as an indicator of the middle (4,500-7,500 ft.) elevations in the Southwest where the wildflowers herein pictured may be found, an introduction to that common tree is in order. Although the 2-needled (pine needles, or leaves, grow in groups, clusters or bundles) Colorado Pinyon (*Pinus edulis*) is the most widespread, there are three similar species. Fourleaf Pinyon (*Pinus quadrifolia*) produces foliage in clusters of four, and Single-leaf Pinyon (*Pinus monophylla*) grows its needles singly. Mexican Pinyon (*Pinus cembroides*) normally has needles in groups of three. All species produce edible seeds so are called nut pines. All are small trees with short trunks and a generally ragged appearance. Pinyon nuts are

handled commercially, the wood is harvested for fuel, and Indians use the pitch for various purposes.

Partner of the pinyon pine in forming pygmy forests of the Southwest uplands is the ubiquitous juniper, represented in the Southwest by at least seven species. Three of these (Utah Juniper, One-seed Juniper, and Rocky Mountain Juniper) are widely distributed, while the other four (Weeping Juniper, Alligator Juniper, Pinchot Juniper, and Mexican Juniper) are localized in their ranges. Juniper wood is aromatic and decay-resistant, making it favored for fence posts. Parasitic mistletoe forms conspicuous, yellow-brown clusters among the branches of many juniper trees. See illustration, facing Introduction. Juniper fruits are small, berry-like cones. Juniper pollen is an aggravation to persons allergic to it, causing sinusitis miseries during March and April each year.

Although pure stands of both pinyon and juniper trees are not uncommon, in most places the two mingle to form open woodlands inhabited by a characteristic community of herbs, shrubs, and animals which, together, form the pinyon-juniper life association. This booklet deals with some of the common wildflowers which are a colorful part of that association.

Wildflower Gardens

The use of wildflowers as plants for the home garden is a growing hobby and may be encouraged within reasonable limitations. Certainly, the wholesale digging of native plants cannot be condoned, and wildflower enthusiasts, as conservationists, should be the first to object to any such activity. Many states have laws prohibiting picking or removal of any vegetation from public lands, including road rights-of-way.

How, then, may the person who desires to establish a backyard wildflower garden obtain plant materials? Perhaps the easiest way is to gather wildflower seeds and broadcast them in the garden. Some seedsmen and commercial nurseries sell certain species of wildflower seeds in packets. Such plants as do not grow readily from seed may be transplanted from private lands after obtaining permission from the owner. Persons who have developed wildflower gardens are usually glad to share with a novice, and often are happy to help a neighbor or friend get a start by thinning their own established plantings.

Acknowledgements

Through the deeply appreciated assistance of the following botanists who have identified the flowers pictured herein, this booklet has been made possible:

Dr. Lyman Benson, Professor and Head, Department of Botany, Pomona College, Claremont, California.

Dr. Loren D. Potter, Professor and Chairman, Biology Department, University of New Mexico, Albuquerque, New Mexico.

Dr. William Martin, Department of Biology, University of New Mexico, Albuquerque, New Mexico.

Dr. William B. McDougall, Curator of Botany, Museum of Northern Arizona, Flagstaff, Arizona.

Mrs. Pauline Mead Patraw, botanist and author, 1027 Camino Rancheros, Santa Fe, New Mexico.

Dedication

To my wife "Happy," who spent countless hours beneath the hot sun waiting for the light to be "just right" for photography, and has almost daily stood knee deep in roadside weeds holding a "background" panel, this booklet is affectionately dedicated.

1. Sego lily

STAR TULIP

Worthy of its distinction as state flower of Utah because of its beauty and the historic use of its bulbous root by near-starving pioneers, the mariposa, or butterfly lily, blossoms May to July. The delicate tulip-like flowers on stems 8 to 16 inches tall often dot sagebrush flats on mesas and foothills. Leaves are few and grasslike. The name Sego (pronounced SEE-go) is of Shoshonean origin, and the flower was sacred in Indian legend before the arrival of pioneers in 1847. There are 57 colorful species of *Calochortus* (Greek, meaning beautiful herb) any of them a delight to find.

Calochortus nuttallii

Lily family



2. Datil yucca

BANANA YUCCA

Recognized by a shorter flower stalk than most of the broad-leaved yuccas, the blue yucca is widespread throughout the Southwest at elevations from 3,000 to 8,000 feet. Its blossoms, April to July, are browsed by livestock, and its pulpy fruits were an important item in the diet of Indians who roasted them for immediate consumption or dried them for winter food. The fresh fruits were sometimes fermented for beverage purposes. Leaf fibers provided material for weaving sandals, baskets, and cloth. The yucca is a classic example of a plant dependent upon a specific insect (a small moth) for pollenizing its blossoms which, in the resulting seed development, provide food for the moth's larvae.

Yucca baccata

Lily family



3. Soapweed yucca

Attention-getting at any season, the Spanish bayonet (New Mexico's state flower) is sensational when in blossom. There are many species of narrow leafed yuccas varying in size from the low growing soapweeds of the uplands to the tree-size monsters of the deserts. Leaf tips of all are needle sharp and can inflict a painful jab to anyone walking carelessly among the plants. The fruit, a tough, dry capsule, was unsuited for food but the Indians found uses for much of the plant. The roots produce suds when rubbed in water and are used as a shampoo by the Navajos who call the plant Yaybi-tsa-si. Mission priests referred to the yucca as "our Lord's candlestick" when in bloom, May to July. Small animals find protective shelter beneath the bristling array of stiff, needle-tipped leaves.

Yucca baileyi

Lily family

4. Utah agave

CENTURYPLANT

Spectacular when blooming (May-June), but limited in range to northern Arizona, southern Utah and southern Nevada, 3,000 to 7,500 feet, Utah Agave (ah-GAH-vee) is one of a dozen or more species of mescal thriving in an arid environment. Hooklike spines along leaf margins serve to prevent confusing agaves with the yuccas which they superficially resemble. The name century-plant derives from the fact that each plant devotes 8 to 20 years storing up plant food. It then puts all this accumulated strength into development of a fast-growing flower stalk topped with a plume of yellow flowers attractive to bees and hummingbirds. When the seeds have matured, the plant dies, its dried stalk remaining as a stark reminder of former beauty. Indians gathered and roasted emerging flower stalks, and the excavations which they used are known as "mescal pits." Picture by H. V. Reeves.

Agave utahensis

Amaryliss family



5. Rocky Mountain iris

FLEUR-DE-LIS, SNAKE-LILY,
WATER FLAG

Preferring moist meadows above 6,000 feet, blue flag grows in large clumps of flat, sword-shaped leaves rising from a thick, horizontal, much branched rootstock. Leaves and roots are said to be poisonous to livestock. Plants bloom May-July, the blue to violet flowers fading to white with age. A truly American species, Rocky Mountain iris is considered by some specialists to be as beautiful, if not as large, as some of the imported cultivated varieties. The family name is Greek for "rainbow" in recognition of the varied hues of its many members. The name fleur-de-lis refers to the selection of the iris by Louis-the-Seventh of France as the official emblem of the royal house.

Iris missouriensis

Iris family



6. Fremont cottonwood

One of a half-dozen cottonwood species growing along water courses and in other moist locations throughout the Southwest, Fremont's is perhaps the most common at or below 6,500 feet. The springtime blossoms of the male trees are colorful catkins that produce pollen, to which some people are allergic. Female trees yield copious quantities of downy seeds, the "cotton" which goes with the wind reducing the species' acceptability as a dooryard shade tree. Wood of the fast-growing cottonwood is light, tough, and not durable, but used to some extent as firewood. Beavers use cuttings in dam building and repair, and eat the tender bark. Hopi Indians use the wood in carving kachina dolls.

Populus fremontii

Willow family





7. Sulphurflower

WAVYLEAF WILDBUCKWHEAT

Several species of wildbuckwheat are called sulphurflower because of their attractive sulphur-yellow blossoms. They bloom from May to September, at elevations between 5,000 and 9,000 feet and are often associated with sagebrush. The flowers attract insects and ripening seeds are sought by small rodents and birds. As the blossoms age they gradually change color from sulphur-yellow to shades of orange and brown. Most species are tough, long-lived plants well equipped to thrive in a rugged environment.

Eriogonum umbellatum

Buckwheat family

8. Colorado four-o'clock

Forming leafy clumps generously stippled with magenta-purple blossoms, Colorado four-o'clock is a sturdy perennial flowering throughout the summer below 7,000 feet. Night bloomers, the plants are noticeable, although not spectacular, throughout the day. As sunset draws near, dozens of beautiful flowers open to cover the plants with a blanket of color. Not uncommon on road shoulders, the plants are equally at home on rocky hillsides. Hopi Indians are said to eat the roots to stimulate visions.

Mirabilis multiflora

Four-o'clock family





9. *Clematis*

VIRGIN'S BOWER

Draping its leafy runners over fences, rocks, shrubs, and even climbing into the lower branches of small trees, these delicate vines with their masses of little, white flowers create attractive roadside bowers May to September. This species may be found at 3,000 to 8,000 feet from western Canada and North Dakota to New Mexico, Arizona and California. An eastern species is called travelers' joy. Female plants produce decorative, cottony seed plumes that remain on the plants long after autumn frosts have harvested the leaves. Clematis is said to be used by some Indian groups as a remedy for colds and sore throat. These perennials are popular in some localities as decorative vines for the home wildflower garden.

Clematis ligusticifolia

Crowfoot family

10. *Barberry*

HOLLYGRAPE, ALGERITA

Also known as Fremont barberry, this evergreen shrub is a close relative of the creeping hollygrape, state flower of Oregon. Also called Fremont mahonia, this attractive bush covers itself, May to July, with bright clusters of fragrant yellow flowers. The fruits are dark blue, edible berries. Because the shrub, in common with other species of the genus, is alternate host of the black-stem rust of cereals, its use as a landscaping ornamental is strictly taboo. Hopi Indians make various articles from the wood, and extract from the roots a bright yellow dye.

Berberis fremontii

Barberry family





11. Pricklepoppy

One of the common and distinctive drought resistant perennials of the Southwest is the thistle poppy, prickly poppy, or chicalote. It may be encountered at elevations between 1,500 and 8,000 feet. In the Pinyon-Juniper belt it blossoms during summer months, but at lower levels may be found in blossom throughout most of the year. Its acrid yellow sap and dense covering of spines repel livestock so the plants sometimes take possession of overgrazed ranges. Although the seeds, borne in a capsule-like pod, contain a powerful narcotic, they are relished by mourning doves. (Note—recent nomenclature refers to this species as *Argemone munita*, subspecies *rotundata*).

Argemone platyceras

Poppy family

12. Golden corydalis

GOLDENSMOKE

Another plant with yellow sap is the spring-blooming golden corydalis usually found in protected, moist locations below 7,500 feet. It may bloom again in late summer. The feathery, weak-stemmed foliage contains alkaloids reputed poisonous to sheep, less so to cattle. One of the first spring flowers, this low-growing perennial vies with the pussywillow in announcing arrival of a new growing season. Flowers have a strange shape and mature to form curved pods containing many shiny black seeds.

Corydalis aurea

Poppy family





13. *Princesplume*

The showy, almost gaudy spike of the princesplume, or desert plume, seems out of place on dry mesas or hot canyon walls. Blooming in May and June, flowers at the base of the spike open first, and by the time the buds at the tip of the spike are ready to open, those at the base have matured into long, narrow, drooping seed pods. Indians use the plants as pot herbs and make a mush of the seeds. Princesplume is one of the plants tolerant of gypsum soils.

Stanleya pinnata

Mustard family

14. *Pepperweed*

Common throughout the Southwest, but likely to escape notice, pepperweed, sometimes called pepper-grass, is a freely-branched annual 6 to 24 inches tall. There are many species, some of which you will undoubtedly encounter on road shoulders and in open fields at elevations below 7,500 feet, blossoming February to August. Arizona Indians used the seeds for food and flavoring. A European species is grown for greens, and cress-seed oil is obtained from the fruits.

Lepidium medium

Mustard family





15. *Bee spiderflower*

ROCKY MOUNTAIN BEEPLANT,
STINKING CLOVER

Also known as skunkweed, beeplant is a summer-flowering "weed" sometimes taking over entire fields, or may be massed with sunflowers along roadsides and in fence corners at elevations between 4,500 and 7,000 feet. Considered a valuable source of nectar by beekeepers, the unpleasant odor of the crushed foliage raises question as to flavor of the honey. Hummingbirds are often seen visiting the flowers, and mourning doves relish the seeds. There is a yellow-flowered species (*Cleome lutea*) usually found in moist locations, and plants with white blossoms are not uncommon. Beeplant is also called stinkweed and pink cleome in some localities.

Cleome serrulata

Caper family

16. *Roughseed clammyweed*

Characterized by an unpleasant odor, clammyweed is sticky or clammy to the touch. Its seed pods, 1½ to 3 inches long, appear to be "hanging" upward in defiance of gravity. The plant is a stiffly erect annual, 1 to 3 feet tall, usually found growing in sandy washes or along stream beds at elevations between 1,000 and 6,500 feet. Blooms occur May to October with flowers and fruits present at the same time. It is found from western Canada south to Texas, New Mexico, and Arizona.

Polanisia trachysperma

Caper family





17. *Fendlerbush*

CLIFF FENDLERBUSH

Sometimes called false mockorange because of its resemblance to the syringa (state flower of Idaho), fendlerbush is a handsome shrub when in bloom, March to June. The showy flowers are fragrant and the entire bush makes a delightful addition to ornamental plantings. Fairly common on rocky hillsides at elevations between 4,000 and 7,000 feet, fendlerbush is browsed by deer and bighorn and, to some extent, by cattle when grass is scarce.

Fendlera rupicola

Saxifrage family

18. *Golden currant*

Also known as buffalo currant, this attractive shrub is plentiful along stream banks and in moist foothill canyons, 4,000 to 7,000 feet, where it blossoms early in the spring. Sometimes grown as an ornamental, its yellow flowers are replaced by edible blue-black fruits attractive to birds and small rodents. The clove-shaped flowers have a spicy fragrance leading to the name clove bush. The shrub lacks the prickles commonly associated with wild currants and gooseberries.

Ribes aureum

Saxifrage family





19. *Trumpet gooseberry*

Adding to the lush greenery along foothill canyon bottoms above 6,000 feet, trumpet gooseberry is a verdant shrub with clusters, in May and June, of small, tubular flowers. These mature in midsummer as dark red or black fruits relished by birds, small rodents, and even bears. The dense foliage is browsed by deer, and Indians ate the berries, both fresh and dried. Most species of *Ribes* serve as alternate hosts of the white pine blister rust which kills the 5-needled pines. By destroying wild currant and gooseberry plants, foresters break the cycle, thereby protecting the pines. Since 5-needled pines are rare in the Southwest, *Ribes* retains its place in the plant community.

Ribes leptanthum

Saxifrage family

20. *Tansybush*

Tansybush is an aromatic, densely branched shrub which blooms July to November, occurring at elevations between 4,500 and 8,000 feet. Its fern-like leaves give it the name fernbush, and its fragrant flowers lead to the appellation desertsweet. Blossoms are small but grow in dense, showy clusters. Rare in many parts of the Southwest, tansybush is abundant in the Grand Canyon region, thriving in open stands of sagebrush and among pinyons and junipers. The foliage is browsed by sheep, goats, and deer but apparently not by cattle.

Chamaebatiaria millefolium

Rose family



21. Serviceberry

SHADBERRY, SHADBLOW,
JUNE BERRY

There are several species of serviceberry, or shadbush, in the Southwest, all shrubs or small trees blooming early in the spring before other shrubs have awakened. The dark blue, berry-like fruits resemble small apples and were harvested by Indians to be dried for winter use or mixed with fat meat to form the concentrated food, pemmican. Pioneers gathered the fruits to make pies, jelly, and wine. Birds and rodents relish the fruits, and the foliage is browsed by deer, elk, bighorn, and domestic livestock.

Amelanchier bakeri

Rose family



22. Apacheplume

A bushy shrub, Apacheplume derives its name from the masses of seed plumes which cover the bushes with cottony fuzz in late summer. The shrubs are found at elevations between 3,000 and 8,000 feet on road shoulders, open hillsides, and bordering arroyos. First rose-like, fragile blossoms appear in April to be followed by the pale pink, maturing to white, seed heads. It is not unusual to find plants with flowers mingling with the powder-puff seed clusters. Cattle browse the handsome bushes when grass is scarce.

Fallugia paradoxa

Rose family

23. *Cliff rose*

QUININE BUSH

Called quinine bush because of the bitter taste of its foliage, cliff rose is a common shrub sometimes reaching tree size in many parts of the pinyon-juniper belt, blossoming April to September. The flowers have a musty fragrance. Where abundant, the plants provide browse for cattle and are especially palatable to deer. A distinct browse line (the limit of height to which deer can reach) in areas where cliff rose is abundant indicates an overpopulated range. Indians braided the stringy bark for clothing, mats, and rope. Hopi (HOPE-ee) Indians made arrows from the wood and used the foliage medicinally. Cliff rose may be found at elevations between 3,000 and 8,000 feet from southern Colorado to southeastern California and south to central Mexico.

Cowania mexicana

Rose family



24. *Woods rose*

WILD ROSE

Nearly everyone is familiar with the large, pink, fragile, fragrant flowers of the wild rose, of which there are many species throughout the Southwest. Although covered with prickles, the plants, often forming dense thickets, are browsed by livestock. The red, berry-like fruits are eaten by birds and other small animals, and were harvested by Indians and pioneers. They are important in winter diet of grouse and quail. The wild rose is the state flower of both Iowa and North Dakota and one species or another may be found at elevations from 3,000 to 9,000 feet, usually in moist locations.

Rosa woodsii

Rose family

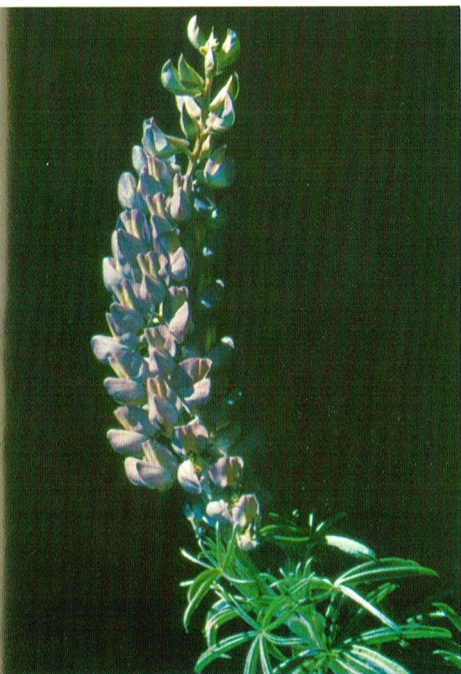


25. Common chokecherry

This large shrub or small tree is usually found at elevations between 4,500 and 8,000 feet along stream courses or in other moist locations. The dark purple, almost black, juicy fruits make delicious jelly and wine. Birds consume them eagerly. Indians ate them fresh, or dried them for winter use, and in the early days are said to have used the bark to make a tea-like beverage. Livestock may be poisoned by eating large quantities of the foliage. The shrubs blossom in May and June, with the fragrant, pendant blossom clusters a delightful indicator of springtime. Fruits ripen in August. Chokecherry foliage turns scarlet, red, and brown, often being the first to assume these autumn colors.

Prunus virginianus

Rose family



26. Lupine

BLUEBONNET

Many species of lupine, most of them with their pea-like blossoms some shade of blue, are abundant through the Southwest at all elevations. Best publicized is the bluebonnet, state flower of Texas. Some species are annuals, others perennial, and several are worthy of cultivation as garden ornamentals. Seeds of a few species contain alkaloids poisonous to livestock, especially sheep. In some localities, lupine is known as Quakerbonnet and wolfbean. Lupine is not only an attractive flower, but the plants, as do other members of the pea family, take nitrogen from the atmosphere and add it to the soil, thereby increasing its fertility.

Lupinus argenteus

Pea family

27. White sweetclover

Sometimes called treeclover, this species was introduced from Eurasia and is grown as a forage plant in some parts of the U.S. It has become naturalized over most of the nation, occupying fields and roadsides at elevations between 1,000 and 7,500 feet. It produces a rank growth 1 to 6 feet tall with tough, woody stems. Flowers appear in July and last until frost. The small, white blossoms yield high quality nectar, providing dependable pasture for honey bees. Flowers and foliage contain caumarin which gives the plants a peculiar odor. Deer and antelope browse the plants, as do domestic livestock.

Melilotus albus

Pea family



28. Yellow sweetclover

Honey clover or yellow melilot, a biennial, was introduced to North America from Eurasia, escaped from cultivation, and is now naturalized and widespread over the continent at elevations up to 8,000 feet. Plants are 1 to 4 feet tall with blossoms similar to white sweetclover, but more delicate and bright yellow. Blossoms occur May to July and produce a spectacular display where abundant on road shoulders and in open fields. The nectar yields honey of high quality and the foliage provides forage for livestock and deer. When in moldy hay yellow sweetclover may produce a chemical that prevents blood clotting in animals that eat it. In England the plant is called king's clover.

Melilotus officinalis

Pea family





29. *Deervetch*

LOTUS

Quite unrelated to the lotuses of Egyptian, Greek, and Hindu fame, deer-vetch is one of many species found in the Southwest. Also known as deer clover and red-and-yellow pea, this low-growing plant is grazed by deer and cattle. The genus is represented by both annuals and perennials, found at roadsides and in open stands of pinyon and juniper. The species *wrightii* occurs at elevations between 4,500 and 9,000 feet blooming May to September. *Lotus utahensis* is a similar and closely related species. *Lotus corniculatus*, known as birdsfoot trefoil, was introduced from Eurasia and has become established here and there throughout the United States.

Lotus wrightii

Pea family

30. *Indigobush*

FEATHER DALEA, DESERT BEAUTY, PEA BUSH

Especially attractive when in blossom, March to June, perennial indigobush is worthy of cultivation as a garden ornamental. Many species are well distributed throughout the Southwest, several of them of forage value to livestock. Species *formosa* is a small shrub generally growing at elevations between 2,000 and 6,500 feet. The flowers are small but so colorful that they attract attention of the passer-by. Hopi Indians chew the root as a sweet.

Dalea formosa

Pea family





31. *White prairieclover*

Prairieclover is a perennial herb, 1 to 2 feet tall, with gland-dotted leaves and flower stems. The genus name refers to the peculiar union of the two floral organs, petals and stamens. Flowers grow in the form of dense spikes. This species is not limited to the Southwest but may be found from Saskatchewan and Montana to Mississippi, Texas, Arizona, and New Mexico at elevations from 3,000 to 7,000 feet. Plants bloom from May to September, are fairly common, and are quite attractive.

Petalostemum candidum

Pea family

32. *Purple prairieclover*

This genus, spelled *Petalostemon* by some botanists, is noted for plants that are deep rooted, hence difficult to transplant. Attractive when in blossom, they are of little importance as forage for livestock or wildlife, and are not sufficiently common to attract more than casual attention. 17 species in the United States include both annuals and perennials. *Purpureum* is usually found in blossom at roadsides in June and July, and ranges from Indiana to Saskatchewan and south to Texas and central Arizona.

Petalostemum purpureum

Pea family



33. *New Mexico locust*

NEW MEXICAN LOCUST

Often mingling with scrub oaks to form dense thickets at elevations from 4,000 to 8,000 feet, the thorny New Mexico locust is an attractive large shrub or small tree. Its pendant, colorful flower clusters, which appear in May and June, are relished by cattle. Cattle and deer browse the foliage, and the shrubs are popular as ornamentals in home plantings. Where large and abundant, the trunks are harvested and make durable fence posts. The shrubs spread by wide-ranging root systems which help to prevent soil erosion.

Robinia neomexicana

Pea family



34. *Straightstem loco*

POISON VETCH, LOCO, LOCOWEED, RATTLEWEED

One of the first roadside flowers to bloom in the spring, this bushy *Astragalus* is noted for its early appearance rather than for its beauty. It represents, possibly, the largest genus of plants in the Southwest, with 72 species in Arizona alone. Several species have many varieties and are so similar in appearance that they can be distinguished only by certain differences in the fruits. Blossoms of most species are colorful and attractive. Some species absorb selenium from the soil, hence are poisonous to livestock, while others provide excellent forage. The names loco and locoweed refer to the fact that, when eaten in quantity by livestock they cause loco (Spanish for "crazy") disease, especially among horses. Bladder-like seed pods which clatter when dry give the name rattleweed to some species. Indians ate the fleshy seed pods, raw or boiled.

Astragalus praelongus

Pea family





35. *Milkvetch*

Quite common at elevations up to 7,000 feet, this species, represented by one of its numerous varieties, sometimes covers many acres of sandy soil with a purple blanket of flowers. Blooming from March to June, an occasional plant with white flowers adds to the interest of the display. Some botanists apply the name milkvetch to all species of *Astragalus* which are not poisonous and which provide valuable grazing for livestock. Milkvetch should not be confused with the true vetches which belong to the genus *Vicia*.

Astragalus lentiginosus

Pea family



36. *Lambert crazyweed*

LAMBERT'S LOCO

Closely related to the milkvetches, crazyweed also is called loco because it too, when eaten in quantity by livestock, causes the animals to "act crazy." In early stages an "addicted" horse becomes dull, listless, and unsteady. It may suddenly run away, or jump into a fence, gate, or other object. In the later stages it loses weight and ceases to eat. In severe cases the animal becomes blind, is unable to walk, and dies in convulsive spasms. Usually found in bloom June to September at elevations between 5,000 and 8,000 feet, crazyweed is a showy flower with white, sometimes purple, flowers. It is readily eaten by horses, cattle, and sheep when grass is scarce, and seems to be habit-forming with sometimes fatal results.

Oxytropis lambertii

Pea family



37. *Peavine*

Peavine is a weakly climbing perennial often found at 5,000 to 7,000 feet in dry, open, pinyon woodlands blooming May to August. The sweetpea-like flowers are large and showy. Plants spread by means of horizontal rootstocks which make them valuable as soil binders. A white-flowered species, *Lathyrus arizonicus*, occurs at higher elevations in Grand Canyon National Park.

Lathyrus eucosmus

Pea family

38. *Blue flax*

LEWIS FLAX, PRAIRIE FLAX

The brilliant but fragile flowers of the perennial blue flax are borne on long stems that sway in the slightest breeze. During the blossoming period of June and July, ground beneath the plants may be bright with fallen petals. This species, which occasionally produces a plant with white petals, is found at elevations between 4,500 and 9,000 feet, and often mingles with sagebrush on dry mesas and open ridges. It was named in honor of Meriwether Lewis of the Lewis and Clark Expedition. The fibrous stems were used by Indians in making cordage and fish lines. Blue flax, when eaten by livestock, is said to cause drowsiness. Linseed oil is made from the seeds of cultivated varieties, and linen from the stem fibers. A shorter-stemmed native species with yellow flowers is not uncommon. Be on the lookout for it.

Linum lewisii

Flax family





39. *Puncturevine*

BULLHEAD, BURNUT, CALTROP

Heartily disliked wherever it grows, puncturevine is quite common up to 7,000 feet throughout the Southwest, blossoming March to October. It is an annual with long, prostrate stems and small, yellow flowers which mature to nut-like fruits, each with two sturdy spines despised by bicycle owners, barefoot boys, and dogs. Hay containing the fruits may cause sores in the mouths of livestock. An import from southern Europe, puncturevine has become naturalized and widespread. Its scientific name, loosely translated as "trouble of the earth," is appropriately applied as it is a useless nuisance to man and beast.

Tribulus terrestris

Caltrop family

40. *Texas croton*

DOVEWEED

Growing at elevations between 500 and 7,000 feet, this unusual rather than beautiful plant is found in bloom along roadsides, railroad embankments, open fields, and dry stream beds from May to November. Although common throughout the Southwest it is by no means limited to this part of the nation ranging as far east as Illinois and Arkansas north to Wyoming. Plants of this genus, of which there are 30 species in the United States, are known as doveweeds because their seeds are relished by three species of native doves. The plants give off an unpleasant odor which, where they are abundant, may be noticed by occupants of passing automobiles. Some species of doveweeds are considered poisonous to cattle. Hopi Indians reportedly use a decoction of the plants as an emetic and as an eye wash.

Croton texensis

Spurge family





41. *Soft globemallow*

FALSE MALLOW, WILD HOLLYHOCK, ROSE-OF-SHARON

Abundant on road shoulders, globemallows of many species grow throughout the Southwest at all elevations up to 8,000 feet. Accurate indentifications are difficult although the species range from small annuals to coarse, woody perennials with blossoms in colors varying from white to rose, pink, coral, and lavender. *Incana* blooms throughout the summer on open mesas, 4,000 to 6,000 feet. Hopi Indians chew the mucilaginous stems as a substitute for gum, and the plants are eaten by deer, bighorn, domestic sheep and goats. The mallow family claims many agricultural adaptations including hibiscus, cotton, okra, and common hollyhock.

Sphaeralcea incana

Mallow family

42. *Juniper globemallow*

Scanty foliage characterizes the globemallows, of which there are many species blooming from early spring to late fall. Their hollyhock-like flowers add much to the beauty of roadsides and rocky slopes throughout the Southwest. *Digitata* prefers well-drained soils, often among open stands of pinyons and junipers at elevations between 4,000 and 7,000 feet. This species grows over a wide area from west Texas and Chihuahua (chee-WAH-wah) to southern Utah.

Sphaeralcea digitata

Mallow family





43. *Yellow mentzelia*

STICKLEAF, EVENING STAR, MOONFLOWER, BLAZINGSTAR

Leaves and stems of stickleaf are covered with minute, barbed hairs which cling to clothing, and to the fur of animals. The plants continue to bloom throughout summer, the flowers remaining closed and inconspicuous during most of the day opening in late afternoon to create a showy display. The many species of stickleaf are found at various elevations between 100 and 8,000 feet. The long period of bloom and attractive star-shaped flowers make the plants eligible for inclusion in the backyard wildflower garden. Indians parched the seeds of some species and ground them into an edible meal.

Mentzelia pumila

Loasa family

44. *Green pitaya*

GREEN-FLOWERED TORCH

The green-flowered torch is a small, inconspicuous representative of a large family of leafless, spiny, perennial succulents, the cactuses. This group is of so much interest to so many people that it deserves a publication all its own (see list of References). In this booklet we will mention only a few that are characteristic of the Pinyon-Juniper association. Green torch belongs to the group called strawberry cactuses because of the juicy, edible fruit of some of the species. The small blossoms of green torch protrude from the sides of the plant in May and June, and do not open wide. When not in blossom, the tiny plants, at 7,500 feet and below, blend with their surroundings and are difficult to find.

Echinocereus viridiflorus

Cactus family



45. *Crimson hedgehog*

MOUND CACTUS

Sometimes growing singly but more often in crowded clumps of up to 150 stems, the plants are covered with bright red, trumpet-shaped flowers in May-July. These colorful mounds are visible for considerable distances on open, rocky hillsides at 4,000 to 9,000 feet, or in grassy spaces among pinyons and junipers. Unlike many cactuses, the flowers do not close at night, and may remain open 3 to 5 days. The yellow-green fruits are edible but are believed by Navajo Indians to cause internal pains, hence the name "heart twister." Some species of this group are called claretcup while others are known as spinemound. The variety *melanacanthus* (by some authorities classified as *Echinocereus coccineus*) is found in southern Utah and Colorado, in northern New Mexico, and eastern Arizona.

Echinocereus triglochidiatus
variety *melanacanthus*

Cactus family



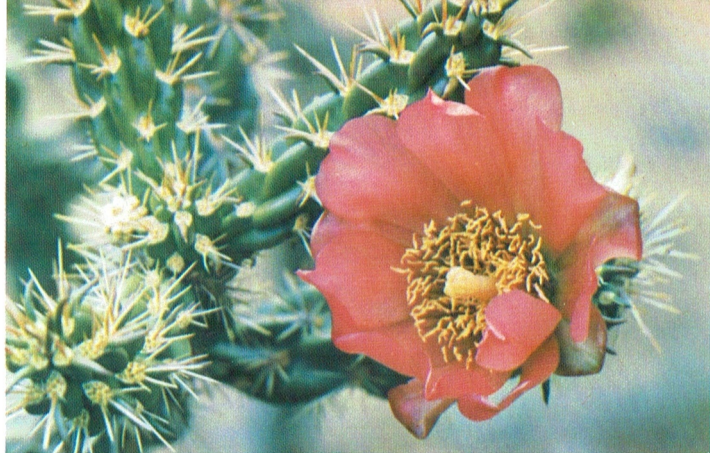
46. *Arizona pincushion*

NIPPLE CACTUS

Abounding in rocky situations at 4,000 to 7,000 feet, this small, globular representative of the pincushion cactus group blossoms in May and June. The flowers may remain open for several days. Although it usually grows as a single stem, it sometimes appears in small clusters, leading to the name hen-and-chickens. In windy weather the plants may be buried by blowing soil. Flowers form a pink crown on top of the plant, maturing to nipple-shaped green fruits sometimes tinged with red. Members of the genus with long, slender, hooked spines are popularly called fishhook cactuses.

Mammillaria aggregata

Cactus family



47. *Walkingstick cholla*

CANE CHOLLA, CANDELABRUM CACTUS

Recognized by their cylindric stems, the spiny chollas (CHOY-ahs) usually form robust bushes with large yellow-bronze to magenta flowers which cover the plants during June and July. Areas where chollas are abundant are often called "cactus forests." Spongy tissues of cactus plants enable them, following rains, to store moisture for frugal use during long periods of drouth. Navajo Indians call this cholla "biting cactus." Bird nests are well protected among the spine-clad branches.

Opuntia imbricata

Cactus family

48. *Tuberous pricklypear*

SMOOTH MOUNTAIN
PRICKLYPEAR

Sometimes called yellow flowered prickly-pear, this cactus grows at elevations below 7,000 feet from western Wisconsin to eastern Colorado, western Texas to northern New Mexico and Arizona. Pricklypears, of which there are many species, have flat, jointed stems more or less prostrate in growth. The joints, or pads, are not leaves, nor are the spines modified leaves. Rudimentary leaves may put in a temporary appearance in the spring. Without water-wasting leaves, their function taken over by green-skinned stem joints, cactuses thrive in hot, dry locations. The conspicuous yellow flowers of *compressa* appear in June and July, each blossom usually remaining open for one day only. *Compressa* is an eastern species represented in the Southwest by variety *macrorrhiza*.

Opuntia compressa
variety *macrorrhiza*

Cactus family





49. *Cliff pricklypear*

The name pricklypear is applied to the many cactuses with flat-jointed stems, called pads. The fruits are somewhat pear-shaped and are eaten, when mature, by birds and other small animals. Some species produce edible fruits which Indians considered a delicacy; which were harvested by pioneers; and are used today in making a delicious jelly. Although many species of pricklypears produce flowers of various shades of yellow, a few species bear pink to red blossoms. Pricklypears are common throughout the Southwest at elevations up to 9,000 feet, usually blossoming May to July. Generally avoided by livestock, they may dominate an overgrazed range. The juicy pear-shaped fruits of several species are called "tunas."

Opuntia rhodantha

Cactus family

50. *Yellow-flowered evening-primrose*

Most of the many members of the genus *Oenothera* have white, fragile, short-stemmed blossoms and grow close to the ground. However, there are several yellow-flowered species including *hookeri* which lifts its large blossoms on somewhat woody stems 2 to 5 feet tall. As the name indicates, its flowers open in the evening attracting, with their delicate fragrance, moths which carry pollen from blossom to blossom. Petals wilt and turn reddish the following morning. Growing in moist locations or where the soil has been disturbed at elevations from 3,500 to 8,000 feet, *hookeri* blossoms July to September. Indians ate the seeds and boiled the roots, which are said to taste like salsify. The species is found from Utah and Colorado south to Mexico, and from Kansas to Nevada.

Oenothera hookeri

Evening-primrose family





51. *Pale evening-primrose*

SUN DROPS

Of the small-flowered species of perennial evening-primrose, *pallida* is the most widely distributed, occurring from Saskatchewan and eastern Washington State to Arizona and New Mexico at elevations from 1,000 to 7,500 feet. It prefers dry open spaces where it blossoms from May to September. Species often inter-grade making identification difficult. By their nocturnal habits, evening-primroses assure pollination by night-flying creatures and avoid depredations by the hordes of day-time insects. The plants are eaten by deer and the seeds provide food for birds and small rodents.

Oenothera pallida

Evening-primrose family

52. *Tufted evening-primrose*

STEMLESS PRIMROSE, ROCKROSE, SANDLILY

Blossoming as early as April and as late as August in some parts of its range, the large, white, fragile flowers of this ground-hugging species open in late afternoon and fade soon after sunup the following morning, turning pink as they wilt. The blossoms are delicately fragrant and often grow en masse along roadsides, creating a spectacular display. Individual flowers are stemless, but have long, slender calyx tubes holding them off the ground. The plants prefer dry, rocky slopes between 4,000 and 7,500 feet. Stemless primrose is distributed from Minnesota to Washington State, south to New Mexico and California.

Oenothera caespitosa

Evening-primrose family



53. *Plains gaura*

SCARLET GAURA,
BUTTERFLYWEED

One or many species of *gaura* may be encountered at elevations from 2,000 to 8,000 feet from southern Canada to Mexico. Some are perennials, others are annuals, and they bloom from May to September. The plants usually grow in small clusters with stems 4 to 20 inches long. The shapeless flowers are disappointing in that only a few are open at any one time. First flowers appear at the base of the spike gradually being replaced by several above with unopened buds continuing to the top of the blossom spike, and withered flowers at the bottom. One of the tall species is called "velvetweed."

Gaura coccinea

Evening-primrose family



54. *Poison milkweed*

This species is also called horsetail milkweed because of its fancied resemblance to the equine appendage, and whorled milkweed due to its leaf arrangement. It is common at roadsides, May to September, from Kansas to Colorado and from Texas to Arizona at elevations from 2,000 to 8,000 feet. Its milky sap contains a glucoside poisonous to livestock, especially to sheep. Fortunately it is rarely eaten except when other forage is scarce. It is reportedly used by Hopi Indian nursing mothers to increase the flow of milk.

Asclepias subverticillata

Milkweed family



55. *Broadleaf milkweed*

SILKWEED

The genus name, *Asclepias*, is derived from the Greek "Asklepios," the god of medicine, as these plants have been used medicinally for many centuries. Plants of the genus are perennials characterized by milky sap and silky seed hairs. The egg-shaped fruit pods are 2 to 3 inches long and crammed with seeds, each with its hairy appendage. Masses of the seed tufts have been used as a substitute for kapok, and some birds consider them excellent nest-building material. Young shoots and leaves of some species are boiled and eaten by Indians as greens, and are said to taste like asparagus. Broadleaf milkweed blossoms from May to August at elevations between 3,000 and 7,000 feet, from Nebraska to Utah and from Texas to Arizona.

Asclepias latifolia

Milkweed family



56. *Field dodder*

CHOISY, LOVEVINE, STRANGLEWEED, DEVIL'S HAIR

"What," people often ask, "are the masses of straw-colored growth covering plants along roadsides?" The answer is "Dodder." This trailing, leafless, rootless, parasitic annual attaches itself to living plants by numerous suckers and obtains nourishment by absorbing juices of its victims. The June to September flowers are small, yellow, and inconspicuous. Some species (there are 16 in Arizona) may attach themselves to any plant, while others prefer alfalfa, clover, or some other field crop, thereby causing serious damage. Dodder reproduces by seeds, each sprout sending down a temporary root which shrivels and drops off as soon as the young plant attaches itself to a host. The infestation spreads rapidly, each plant twining itself about its victim, then reaching out to attack its neighbor.

Cuscuta campestris

Convolvulus family

57. *Many-flowered gilia*

Fairly common on dry slopes, this small-flowered but eye-catching gilia blossoms in mid-summer and early fall. The genus is represented by a considerable number of species, many with larger and more spectacular blossoms. The genus is widespread, but this species is limited to elevations between 4,000 and 9,000 feet from northern New Mexico to southern Utah and Arizona. The genus is named in memory of 18th Century botanist and astronomer, Felippo Luigi Gilii. "Gilia" is pronounced JILLY-ah by most botanists, but Italians call it JEE-lee-ah.

Gilia multiflora

Phlox family



58. *Skyrocket*

PINK GILIA, SCARLET GILIA,
TRUMPET PHLOX, FOXFIRE

One of the showy wildflowers at elevations between 5,000 and 8,000 feet, the biennial June to September skyrocket prefers volcanic soils. Its color varies from brilliant red to pink and purple, even orange. It is not restricted to the Southwest, but is found from Montana and British Columbia to New Mexico, Arizona, and California. Superficially it resembles, and may be confused with, the scarlet bugler penstemon, but the flowers, which are much the same color, differ in shape. Both have blossom stems $1\frac{1}{2}$ to 3 feet tall, both attract hummingbirds, both provide a blaze of color at roadsides, and both are welcome in the home wildflower garden. The crushed leaves of skyrocket have a skunky odor, hence the name polecat plant or skunk flower.

Gilia aggregata

Phlox family



59. *Narrowleaf gromwell*

PUCCOON

Puccoon, in some localities called Indian-paint, is usually found at elevations between 6,000 and 9,000 feet as individual plants rather than in groups. It grows in dry, stony soil and blooms May to August. Indians used the roots to produce a purple dye. Seeds of the genus are hard, white, and shiny leading to the name *Lithospermum* meaning "stone seed." Plants of this genus are annals or perennials.

Lithospermum incisum

Borage family



60. *Dakota verbena*

SWEET WILLIAM, VERVAIN

Common along roadsides where it blooms from May to September, this low-growing biennial is especially showy when mingling with other spring and summer flowers, at elevations between 5,000 and 10,000 feet. It is also a popular inhabitant of wildflower gardens, and thrives in open woodlands of pinyon and juniper. The range is from South Dakota to Texas and from Colorado to Arizona and northern Mexico. There are a number of low-growing species which hybridize, making identification difficult. A tall member of the genus is known as sampler's joy. (A sampler is a person who collects plants for medicinal uses), and a vervain was the herba sacra of ancient Rome.

Verbena bipinnatifida

Vervain family

61. Plains beebalm

WHITE HORSEMINT

Also known as wild bergamot, beebalm grows at elevations below 7,000 feet from Nebraska and Colorado to Texas and Arizona. It is readily recognized as a mint because of its square stem. The arrangement of blossoms and leaves as clusters, with bare stem between, has given it the name of pagoda plant in some localities. There are about 15 species of *Monarda*, some annuals, others perennials. Most of them are summer bloomers, June to September.

Monarda pectinata

Mint family



62. Silverleaf nightshade

BULLNETTLE, WHITE HORSENETTLE

Widely distributed throughout the Southwest at elevations from 1,000 to 6,000 feet, nightshade blooms from May to October. There are a number of similar appearing species, several common along roadsides up to 8,000 feet. All are more or less spiny perennials, and most contain a poisonous alkaloid, solanin. Pima Indians add the crushed berry-like fruits to milk in making cheese. A close relative, *Solanum jamesii*, produces small, edible tubers and is called wild potato.

Solanum elaeagnifolium

Potato family





63. *Blanketweed*

FLANNEL MULLEIN,
WOOLLY MULLEIN

Mullein, a conspicuous roadside perennial, grows singly or in colonies. Merely a rosette of woolly leaves the first year, each plant produces, the second summer, a flower-dotted stalk 2 to 6 feet tall. Some plants retain their small, yellow blossoms until frost, and the many seeds provide winter food for the birds. A native of Sicily, mullein has become established throughout the United States at elevations below 7,500 feet. Hopi Indians smoke the dried leaves, mixed with other herbs, as a treatment for mental disorders. Romans dipped the dried flower stalks in tallow and used them as torches, hence the English name, torchweed, and the Spanish, candelaria.

Verbascum thapsus

Figwort family



64. *Beardtongue*

PALMER PENSTEMON

Palmer penstemon is found along roadsides and in sandy washes at elevations between 3,500 and 6,500 feet. It is one of the very handsome representatives of the genus of more than 250 species. Blossoming from May to September, the flowers are notably fragrant. Flowers of this genus have five stamens, one of which is sterile. This fifth stamen has developed into a long filament adorned with a tuft of yellow hairs, hence the name, beardtongue. Penstemons occur at all elevations up to 10,000 feet. Most are perennial herbs, but a few are small shrubs. They are among the showiest of wildflowers and many are worthy of inclusion in the wildflower garden. Some are spring bloomers, others blossom in mid-summer or fall. Although a few have white, yellow or red flowers, the majority are some tone of blue or purple.

Penstemon palmeri

Figwort family

65. *Beardlip penstemon*

SCARLET BUGLER,
RED PENSTEMON

The name scarlet bugler has been applied to several of the beardtongues which have brilliant red flowers. One of these, *Penstemon eatoni*, is also known as Eaton's firecracker. Red penstemons often grow in spectacular masses on road shoulders and cut banks at elevations between 4,000 and 10,000 feet, from southern Colorado and Utah to the central highlands of Mexico. They bloom from June to October. Stems are from 2 to 4 feet tall with blossoms mostly on one side of the stem. Once established in the wildflower garden, the plants will usually re-seed themselves. Red penstemon should not be confused with skyrocket gilia (No. 58 this book) which it resembles in size and flower color.

Penstemon barbatus

Figwort family



66. *Whipple beardtongue*

Gracing the higher elevations, 6,500 to 12,000 feet, the Whipple beardtongue is one of the larger-flowered species of this widespread genus. Blooming on road shoulders and in open fields during July and August, it forms attractive, low-growing clumps that are certain to draw your attention. Range is limited to the mountains and dry lands from southern Montana to Arizona and New Mexico. Many species of penstemon are grazed by livestock and several, including *whippleanus*, make handsome inhabitants of the wildflower garden.

Penstemon whippleanus

Figwort family





67. Paintbrush

PAINTED CUP

Better known as Indian paintbrush, the paintedcup's many species are widespread over the West from sea level to above timberline. Some species are yellow or orange, but the majority are some shade of red. The brightly colored bracts are much more conspicuous than the flowers, which are small and usually yellowish green. The plants, some species of which are believed to be partially parasitic, often grow in large groups creating a colorful mass display. Where abundant, they contribute to the forage of wildlife and livestock and make a pleasing addition to the wildflower garden. Painted-cup is the state flower of Wyoming.

Castilleja confusa

Figwort family

68. Devilsclaw

UNICORNPLANT

This coarse, somewhat sticky annual with large leaves and delicate flowers is noticeable because of the strange fruit pods, which are shaped like a pair of tongs. The plants are quite rare but when encountered arouse curiosity and interest. A close relative, *Proboscidea* (some botanists call it *Martynia*) *arenaria*, fairly common in the Southwest deserts, produces woody, black-skinned fruits which are stripped by the Indians for use in weaving black designs into baskets. The upland species, usually found below 7,000 feet, blossoms May to October. Stockmen consider the plant a range pest because the horned pods become entangled in the fleece of sheep and on the hooves of horses and cattle.

Proboscidea parviflora

Unicorn Plant family



69. *Blue elder*

ELDERBERRY

Elder is an attractive, many-stemmed, large-leaved shrub noticeable when covered in early summer with creamy blossoms, or later with clusters of small, blue berries. Found at elevations between 6,500 and 8,000 feet in the Southwest, its range is from Alberta and British Columbia to Arizona and southern California. The foliage provides browse for deer and livestock. The edible blue to purple fruits are relished by birds, and were used by pioneers in making wine, pies, and jelly. From the pith-filled stems, hunters fashioned whistles which they used for imitating and attracting elk. A decoction made from the bark and leaves was used by pioneers as a diuretic. The red berries of a closely related species are said to be mildly poisonous. (Note: Kearney and Peebles prefers the Latin name *Sambucus coerulea*.)

Sambucus glauca

Honeysuckle family



70. *Mountain snowberry*

Snowberry is an erect, brushy shrub 3 to 4½ feet tall with small, oval leaves, and flowers growing in pairs in terminal clusters. Blossoms appear May to August to be replaced by clusters of waxy white berries which remain on the plants throughout the winter unless eaten by birds. Sometimes called buckbrush, the shrubs are numerous in foothill canyons above 5,000 feet from west Texas and Colorado to Nevada, Arizona, and Sonora, Mexico. They are often used in landscape plantings. A close relative, the long-flowered snowberry, noted for its blossom fragrance, is common in the pinyon-juniper belt of the Inyo and other mountains of the Death Valley region, north to Oregon and east to Nevada and Utah.

Symphoricarpos oreophilus

Honeysuckle family



71. Dotted gayfeather

Also known as blazing star and button snakeroot, this gay-feather displays resinous dots on the linear leaves, hence the name "dotted." Unbranched flower stems rise in crowded spikes from a round, underground corm which Indians dug and ate. Blossoming from July until frost, this species occurs from Alberta and Michigan to Arkansas, New Mexico, and Colorado on dry soils of open mesas and foothills mostly east of the Continental Divide. Featherlike bristles on the seeds are not found in other species. The plants will add a brilliant spot of color to any wildflower garden.

Liatris punctata

Sunflower family



72. Broadleaf gumplant

CURLYCUP GUMWEED

Gumweed, also called resinweed and tarweed, belongs to the large group of yellow-flowered plants known as "yellow composites"; yellow because of the color of the ray florets, and composites because they are members of the *Compositae* or sunflower family. Leaves and flower buds of gumweed are covered with a clear, sticky substance for which the plants are named. Among the first to invade a disturbed area, they spread rapidly. Broadleaf gumweed blooms from July to September and in the Southwest is found at elevations from 4,000 to 7,500 feet, and from Minnesota to British Columbia and south to Texas and California. Gumweed was used by Indians medicinally and as a substitute for tea. At one time it was an official drug plant recommended as a sedative and an expectorant. It was also used in the treatment of asthma and was especially effective in relief of poison ivy miseries.

Grindelia squarrosa

Sunflower family





73. *Broom snakeweed*

MATCHBRUSH

Snakeweed is also known as turpentine weed and broomweed. It is a small, bushy, resinous plant, widespread throughout the West where it covers mesas and plateaulands in late summer with a yellow blanket. Unpalatable to livestock, it spreads rapidly when forage plants are killed by overgrazing, and eventually dominates the range. Found at Southwestern elevations between 3,000 and 8,000 feet, snakeweed occurs from Saskatchewan to Oregon and from Kansas to Arizona and California. Its seeds are eaten by scaled quail and other birds, and plants are browsed to some extent by deer, pronghorn, and rabbits.

Gutierrezia sarothrae

Sunflower family

74. *Goldenrod*

In the United States there are about 50 species of goldenrod, this one being a rough, stout-stemmed perennial herb 3 to 6 feet tall, and blooming in July and August. In the Southwest it favors moist locations along fence rows and ditch banks at elevations between 3,000 and 8,500 feet. In some places, goldenrod is known as "yellowweed." Its sap contains small amounts of rubber. Some species are said to be poisonous to livestock, especially to sheep. Leaves of some species are eaten by Indians of northern Arizona. *Solidago canadensis* is found from Newfoundland and Virginia to Montana, Nevada, and central Arizona.

Solidago canadensis

Sunflower family





75. **Goldenweed**

YELLOW DAISY

Slender goldenbush and jimmyweed are other names applied to this annual herb, usually much branched and rarely more than a foot high. The flowers resemble asters with many blossom heads. There are many species of *Aplopappus* (some authorities prefer the spelling *Haplopappus*, others assign these plants to the genus *Machaeranthera*). Inhabiting dry plains, mesas, and open rocky slopes below 7,000 feet in the Southwest, goldenweed may be found in blossom March to November. It occurs from Colorado to Texas and westward to the mountains of southern California.

Aplopappus gracilis

Sunflower family

76. **Rubber rabbitbrush**

CHAMISO

Although the name "chamiso" refers to a variety of coarse shrubs, it is applied to rabbitbrush in many parts of the pinyon-juniper belt. In early fall the sandy washes, roadsides, and dry fields glow with the bright yellow blossoms of these gray shrubs, often mistaken for sagebrush. Because their sap contains latex, several species are called rubberbrush. *Nauzeosus* is a straggling shrub 2 to 7 feet tall with an unpleasant odor, but the blossoms attract insects. The woody-stemmed shrubs thrive in poor soil at elevations up to 7,500 feet. Navajo Indians make yellow dye from the blossoms and green dye from the inner bark. The dense shrubs provide refuge and shelter for birds, rabbits, and other small creatures. Rubber rabbitbrush is at home from Saskatchewan to British Columbia to west Texas, southern California, and northern Mexico, at elevations above 2,000 feet.

Chrysothamnus nauseosus

Sunflower family





77. *Baby aster*

There are many species of asters (120 in the U. S.) varying in size from low-growing spring bloomers to tall and bushy autumn-flowering varieties. Their colors vary from white and yellow to deep purple. Most are perennials, but there are some annuals and biennials. Many are worthy of inclusion in your wildflower garden and easy to start from seed. Asters are found from sea level to above timberline, and are among the more cosmopolitan of American wildflowers. *Hirtifolius* occurs at elevations from 4,500 to 7,000 feet blossoming from March to September, and is usually found on limestone soils in Wyoming and Nevada south to Texas and Arizona. Its white blossoms fade with age to pink or pale purple.

Aster hirtifolius

Sunflower family

78. *White aster*

Because most people think of asters as purple or violet flowers, one with white rays may puzzle the observer who thinks it's a daisy. White aster is widely distributed from Minnesota to British Columbia and south to Texas, New Mexico, and Arizona. The plants are 8 to 24 inches tall and usually well covered with blossoms from August to October. This species has several varieties more or less difficult to identify. All are reported to absorb selenium from the soil, making them poisonous to livestock if eaten in quantity. The plants are adapted to hot, dry situations and their ability to withstand drought makes them of value in retarding soil erosion.

Aster commutatus

Sunflower family





79. *Bigelow aster*

TANSY ASTER

The large, showy flowers of tansy aster and its habit of growing in masses enables it to present an eye-catching display at the height of its blossoming season in September and October. In some parts of its range, 3,000 to 7,000 feet, it blooms at the same time as rabbitbrush and snakeweed, the combination presenting a never-to-be-forgotten display of purple and gold. In some localities it is called Michaelmas daisy or Christmas daisy. The plants, 8 to 40 inches tall, bloom as early as March or as late as November. They are browsed by deer and livestock, and birds eat the seeds. The species' range is limited to Colorado, New Mexico, and Arizona but the similar pinyon aster (*Aster canescens*) inhabits the pinyon-juniper belt of mountains in the northern and eastern parts of the Mohave Desert.

Aster bigelovii

Sunflower family

80. *Plains zinnia*

ROCKY MOUNTAIN ZINNIA

If you travel the Southwest's pinyon-juniper belt in summer you are familiar with the showy clumps of bright yellow flowers, often in company with verbenas and coneflowers, adding charm to the roadsides. Wild zinnia, of which there are three species in the Southwest, is a woody, low-growing perennial blossoming from June to October at elevations between 4,000 and 6,500 feet. The showy flowers grow singly at the ends of the short branches. Although smaller than the garden zinnia (a Mexico native), plains zinnia merits a place in the wildflower garden. It is a common roadside plant from Kansas to Nevada south to Texas, New Mexico, and Arizona.

Zinnia grandiflora

Sunflower family



81. *Shortray prairie-coneflower*

Unusual rather than beautiful, the shortray prairie-coneflower is a perennial herb blooming June to September at elevations in the Southwest between 5,000 and 7,000 feet. It is not common but, because of its peculiar appearance, attracts attention at roadsides and on plains and mesas from Kansas and Texas to Colorado, New Mexico, and northern Arizona. The many small disc florets form a thimble-shaped head at the base of which are the hard-to-see short ray florets. The ripened seeds are reported to be sought by birds and small rodents.

Ratibida tagetes

Sunflower family



82. *Upright prairie-coneflower*

Its stems 1 to 3 feet tall and its showy flower heads nodding in the breeze, upright prairie-coneflower is certain to attract attention. Perhaps the most unusual feature of this quite unusual species is the presence of ray florets of two distinct colors, which most of us would consider as varietal difference. Blossoming from June to October in the Southwest at elevations from 5,000 and 7,500 feet, coneflower is common at roadsides and in open fields from Minnesota to Arkansas and west to New Mexico and Arizona. Botanists think the species originated in the prairie states and spread to the Southwest. Indians are said to have dried the flower heads and used them as tea. The plants are suspected of being poisonous to cattle but are rarely eaten by livestock.

Ratibida columnaris

Sunflower family



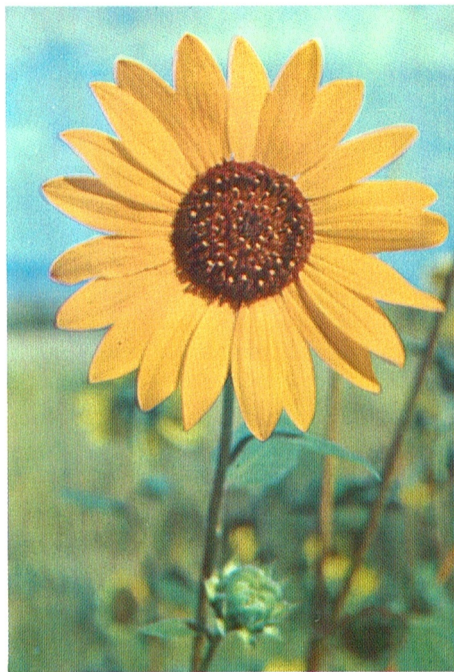
83. *Common sunflower*

ANNUAL SUNFLOWER

Nearly everyone is familiar with the state flower of Kansas, the common sunflower, that brightens roadsides over much of the West and Southwest from May to October. A coarse, branching annual with rough leaves and stems 3 to 7 feet tall, it is probably a native of Peru. It is not content to dominate roadsides, but, where moisture is adequate, preempts fencerows, waste lands, and even cultivated fields. The large heads, made up of many disc florets surrounded by many ray flowers, produce dozens of seeds which are eaten by birds and rodents. Sunflower seeds are raised commercially to produce oil, and meal for stock and poultry feed. Young stems and foliage are processed for ensilage in prairie states. Hopi Indians make from the seeds purple and black dye for coloring cloth, basket fibers, and their bodies in preparation for ceremonial rites. Dried leaves are smoked as a tobacco substitute and the seeds are eaten out-of-hand.

Helianthus annuus

Sunflower family



84. *Prairie sunflower*

NARROWLEAF SUNFLOWER

Smaller, 1½ to 4 feet, than its better-known relative the common sunflower, prairie sunflower also is distributed throughout the West at elevations from 1,000 to 7,500 feet. Known in some localities as sand sunflower, this species has smaller flower heads. It appears along roadsides as early as April in the southern part of the range, which extends from Saskatchewan to Missouri and from Texas to California and north to British Columbia. *Helianthus*, the generic name for this large group of plants, is derived from the Greek "helios"—the sun, and "anthos"—a plant.

Helianthus petiolaris

Sunflower family



85. *Golden crownbeard*

GOLDWEED

An all-yellow, sunflower-like annual, crownbeard is at home in the Southwest at all elevations up to 7,500 feet. Blossoming from May to October, it is a common roadside habitué from Texas to Kansas and westward to Montana and California. The branching stems are 10 inches to 3 feet tall, depending on soil and moisture conditions. The plants sometimes take over open fields creating spectacular mass displays like blankets of gold. The seeds provide food for rodents and birds, and pioneers are recorded as having made use of the plants in treatment of boils and skin ailments. Hopi Indians bathe in water in which the plants have been soaked, to relieve pain of spider (black widow?) bites.

Verbesina encelioides

Sunflower family



86. *Colorado greenthread*

There are less than a dozen species of these slender perennials with small but numerous flower heads. Unusual in appearance, they arouse curiosity rather than admiration. You find them at 4,000 to 7,500 feet, on grassy plains, roadsides, and in open woodlands, blooming May to October from Nebraska, Wyoming, and Utah to Texas, Arizona, and northern Mexico. They are on record, also, in southern South America! Hopi Indians dried the young flowers and tender leaves as a substitute for tea, and obtained from the plants a reddish-brown dye. A close relative is known as "Navajo tea," and another species is used as tea by native New Mexicans under the name of "cota."

Thelesperma megapotamicum

Sunflower family





87. *Woolly paperflower*

PAPER DAISY

Paperflower is a small, many-branched shrub growing at elevations between 4,000 and 7,000 feet. When in blossom, May to October, the flowers are clustered at ends of the branches giving the plants a compact, rounded shape. Stems and leaves are covered with fine hairs producing a woolly appearance. With age, the bright yellow flowers fade to straw color, become papery in texture, and may remain on the plant for weeks. The species is a Southwesterner, being limited in range to open plains and mesas from west Texas and New Mexico to eastern Arizona and northern Mexico. Stockmen report the plants poisonous to sheep.

Psilostrophe tagetina

Sunflower family



88. *Bahia*

RAGLEAF

Noticeable on roadsides at elevations between 5,000 and 9,000 feet, the flower heads of bahia, or wild chrysanthemum, sway in the breezes created by passing automobiles. The blossoms, August to October, are at the tips of slender stems, 1 to 3 feet tall, and are not uncommon from Wyoming south to New Mexico and Arizona. There are several similar desert species. Sometimes called yellow-ragweed, these plants should not be confused with common ragweed (genus *Ambrosia*) so obnoxious to "hay fever" sufferers.

Bahia dissecta

Sunflower family

89. Bitterweed

Closely related to the handsome mountain dandelion of above-timberline flower fields, bitterweed is limited to elevations between 4,000 and 7,000 feet. Its flowering stems are leafless and rise from a much-branched base covered with hairy leaves. It blooms from May to October. This bitter tasting perennial, reported poisonous to livestock which, fortunately, rarely eat it, grows on dry, rocky slopes from Colorado and Nevada south to New Mexico, Arizona, and southern California. It increases rapidly on overgrazed ranges. Hopi Indians make a stimulating beverage from the plant, and apply the leaves locally to alleviate pain. Bitterweed is reportedly cultivated in Europe as an ornamental in landscaping.

Hymenoxys acaulis

Sunflower family



90. Pingue bitterweed

PINGWING

Pingwing, also called rubberweed and Colorado rubber plant, is a tufted perennial with a woody crown and branched stems 6 to 18 inches tall. The flowers appear June to September, at tips of the stems and give the plants a flat-topped appearance. Rarely growing in dense stands, the clumps may be numerous in open grasslands and on sunny slopes at 5,000 to 9,000 feet, particularly on overgrazed ranges. The milky sap contains considerable latex but is commercially impractical to harvest for rubber. The plants are toxic to livestock. Rarely eaten by cattle, they pose a threat to sheep. The root bark is used by Indians as a substitute for chewing gum. This species occurs from southern Canada to Colorado, New Mexico and Arizona.

Hymenoxys richardsonii

Sunflower family





91. *Perky sue*

BITTERWEED

Normally a flower of early spring, perky sue may blossom again following summer rains. It is particularly welcome in April after severe winters, when it covers hillsides at elevations between 4,500 and 7,500 feet with its golden carpet. The leaves glisten with a covering of silky hairs recognized by the specific name *argentea* meaning "silvery." The range of this species is limited to New Mexico and eastern Arizona. Until recently the accepted generic name has been *Actinia*, which some botanists still prefer.

Hymenoxys argentea

Sunflower family



92. *Slender gaillardia*

BLANKETFLOWER, FIREWHEEL

Readily recognized by its close resemblance to the cultivated gaillardia, blanketflower numbers about a dozen species native to North America. Some are annuals, but slender gaillardia is a perennial. The slender stems, 6 to 30 inches tall, each bear a bud, flower, or seed head, May to October, at elevations from 3,500 to 7,000 feet. It occurs in open fields and among pinyon and juniper trees, and mixes with other flowers to form colorful patches on road shoulders. Gaillardia is widely used as a garden ornamental in this country and also in Europe.

Gaillardia pinnatifida

Sunflower family



93. *Big sagebrush*

WORMWOOD, MUGWORT

Sagebrush is probably the most publicized plant in the West. Unfortunately there are many other shrubs with gray-green foliage, any or all of which are "sagebrush" to travelers who have read western fiction. Big sagebrush is a stiff, brushy shrub covering much of the range land from the Dakotas to the Rocky Mountains, and between the Rockies and the Sierra Nevada and Cascade Ranges, from 5,000 to 8,000 feet. In most places 3 to 4 feet high, the shrubs may grow to 6 or 8 feet where soil and moisture conditions are favorable. The blossoms, which appear in August and September, are small and inconspicuous; nevertheless sagebrush is the state flower of Nevada. The three-pronged leaves are aromatic and form the principal food of the sage grouse. Livestock, rabbits, deer, and elk browse the plants which provide cover and nesting sites for many small creatures.

Artemisia tridentata

Sunflower family

94. *Groundsel*

RAGWORT, BUTTERWEED

Groundsel flowers mature to form seeds with white hairs attached, thereby suggesting the name *Senecio* from "senex" meaning "old man." Plants of this genus, and there are many, have an untidy appearance due to the stringy foliage and unshaven look of the hairy seed heads. Flowers, present throughout the summer, often mingle with the hairy seed plumes of earlier bloom. Most groundsels are shrubby plants 1 to 2 feet high. The flower rays are widely separated adding to the unkempt appearance and leading to the name Ragwort. *Multicapitatus* is found in dry, rocky, open locations in woodlands, canyons, and on mesa tops from Colorado and Utah to New Mexico and Arizona.

Senecio multicapitatus

Sunflower family





95. Threadleaf groundsel

FELTY GROUNDSEL

This species finds suitable habitats along sandy washes and in open woodlands at elevations from 2,500 to 7,500 feet. At lower elevations it blossoms during most of the year, but at higher levels blooms from May to November. Stems, 1 to 3 feet tall, grow close together forming a more or less woolly clump, with leaves to the top. It ranges from Colorado and Utah south to Texas, New Mexico, Arizona, and Mexico. This species is poisonous to livestock but is rarely eaten except when all other forage is absent. There are a number of other species, including showy forms in cultivation under the name "Cineraria."

Senecio longilobus

Sunflower family



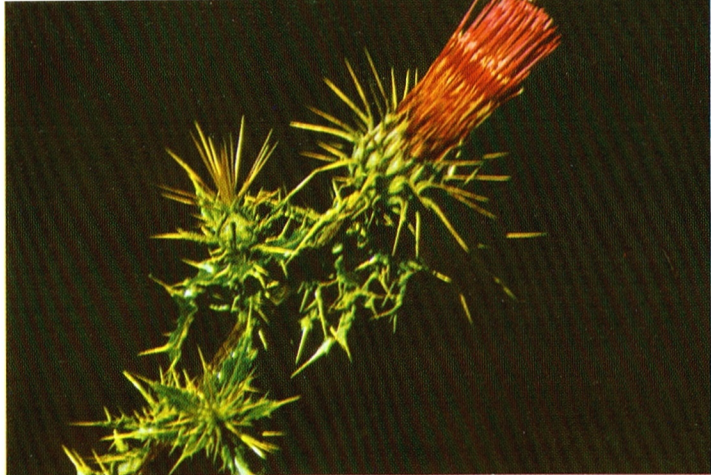
96. Canada thistle

CREeping THISTLE

A native of Europe, cursed thistle, as it is sometimes called, has become established throughout much of southern Canada and western United States in pastures, meadows, and hayfields at middle elevations up to 7,500 feet. It is one of the farmers' annoying pests, the spiny stems and leaves spoiling many a hay crop. Once established, it spreads rapidly by creeping rootstocks and is very difficult to eradicate. This perennial grows in dense patches sometimes covering an acre or more. Although the blossoms are not bright, a field in full August bloom is an attractive sight, except to the farmer who owns it.

Cirsium arvense

Sunflower family



97. Yellow-spined thistle

Cirsium (also spelled *Circium*) means "a swollen vein" for which human ailment the thistle, at one time, was considered a remedy. Representatives of the genus are common from deserts to timberline. This species is 1 to 4 feet tall, and blossoms in June and July. It is similar to *Cirsium arizonicum* and to *Cirsium rothrockii* and hybridizes with both. The long, yellow spines are characteristic of *nidulum*. Despite the prickles, horses and burros nip off the flower heads. Navajo and Hopi Indians use thistles medicinally. Yellow-spined thistle is fairly common at elevations between 5,500 and 8,000 feet in Nevada, Arizona, and southern Utah.

Cirsium nidulum

Sunflower family

98. Arizona thistle

Growing at elevations 3,000 to 7,000 feet, Arizona thistle is a fairly common roadside flower and may be found in bloom May to October. It also occurs on rocky slopes and in open spaces among pinyons and junipers. The blossoms, which face upward toward the sun, are visited by hummingbirds and by insects. Indians dug and ate the fleshy roots.

Cirsium arizonicum

Sunflower family



99. Common chicory

SUCCORY

Chicory has been cultivated as a pot herb, salad ingredient, and substitute for coffee for many centuries. Although a native of Europe, it was cultivated in the U.S. before 1900. In England the roots are roasted, ground, and mixed with coffee. In France, the leaves are blanched and served as salad called "barbe des Capucins." The root is eaten under the names of "barbe" and "witloof." It was, at one time, a staple in the diet of Egyptians. In the United States and Canada it is now considered a perennial weed, widespread at elevations below 7,000 feet, blossoming July to September.

Cichorium intybus

Sunflower family

100. Salsify

GOATSBEARD, GOAT DANDELION

The noticeable feature of this common plant is its enormous seed head resembling that of a dandelion, some plants having gone to seed while others are still blooming, usually in June and July. Similar species are known as oyster plant and vegetable oyster, the former, *Trogopogon porifolius*, having purple blossoms. The flowers, borne at the tips of sturdy stems 1 to 3 feet tall, open in early morning and close about noon. Each seed is attached to a silky "parachute" so it may be carried by the wind for a short distance or for many miles. All three species are naturalized from Europe and all contain milky sap. Salsify is quite common at elevations between 3,500 and 7,000 feet, Colorado to Idaho and south to New Mexico and Arizona.

Trogopogon dubius

Sunflower family

References

- Craighead, John J., Craighead Frank C., and Davis, Ray J.; *A Field Guide To Rocky Mountain Wildflowers*, Houghton Mifflin Co., Boston, 1963.
- Dana, Mrs. William Starr, *How To Know The Wildflowers*; Dover Publications, Inc. New York 1963.
- Earle, W. Hubert, *Cacti Of The Southwest*; Science Bulletin Number 4, Arizona Cactus and Native Flora Society, Phoenix, Arizona, 1963.
- Gould, F. W., *Texas Plants—A Checklist And Ecological Summary*; Texas Agricultural Experiment Station, 1962.
- Jaeger, Edmund C., *Desert Wild Flowers*; Stanford University Press, 1956.
- Jepson, Carl E., and Allen, Leland F.; *Wild Flowers of Zion, Bryce Canyon, And Cedar Breaks*, Zion-Bryce Natural History Association, Springdale, Utah, 1958.
- Kearney, Thomas H., and Peebles, Robert H.; *Arizona Flora*, University of California Press, Berkeley and Los Angeles, 1964.
- Lemmon, Robert S., and Johnson, Charles C.; *Wildflowers of North America In Full Color*, Hanover House, Garden City, New York, 1961.
- Martin, Alexander C., Zim, Herbert S., and Nelson, Arnold L.; *American Wildlife And Plants*, Dover Publications Inc., New York, 1951.
- McDougall, W. B., *Grand Canyon Wild Flowers*; Museum of Northern Arizona, Flagstaff, and Grand Canyon Natural History Association, 1964.
- Parker, Kittie F., *Arizona Ranch, Farm, and Garden Weeds*; University of Arizona Agricultural Extension Service Circular 265, Tucson, 1958.
- Patraw, Pauline M., and Janish, Jeanne R.; *Flowers of the Southwest Mesas*, Southwestern Monuments Association, Globe, Arizona, 1951.
- Roberts, Harold, and Roberts, Rhoda; *Colorado Wild Flowers*, Denver Museum of Natural History, Denver, Colorado, 1959.
- Armstrong, Margaret; *Field Book of Western Wildflowers*, C. P. Putnam's Sons, New York and London, 12th impression 1935.
- Elmore, Francis H.; *Ethnobotany of the Navajo*, University of New Mexico Press, Albuquerque, 1944.
- Parsons, Mary Elizabeth; *The Wild Flowers of California*, Dover Publications, New York, 1966.

INDEX

<i>Agave utahensis</i>	4	Century plant	4
Algerita	10	<i>Chamaebatiaria millefolium</i>	20
<i>Amelanchier bakeri</i>	21	Chamiso	76
Annual sunflower	83	Choisy	56
Apacheplume	22	<i>Chrysothamnus nauseosus</i>	76
<i>Aplopappus gracilis</i>	75	<i>Cichorium intybus</i>	99
<i>Argemone platyceras</i>	11	<i>Cirsium arizonicum</i>	98
Arizona pincushion	46	<i>Cirsium arvense</i>	96
Arizona thistle	98	<i>Cirsium nidulum</i>	97
<i>Artemisia tridentata</i>	93	Clematis	9
<i>Asclepias latifolia</i>	55	<i>Clematis ligusticifolia</i>	9
<i>Asclepias subverticillata</i>	54	<i>Cleome serrulata</i>	15
<i>Aster bigelovii</i>	79	Cliff pricklypear	49
<i>Aster commutatus</i>	78	Cliff rose	23
<i>Aster hirtifolius</i>	77	Colorado four-o'clock	8
<i>Astragalus lentiginosus</i>	35	Colorado greenthread	86
<i>Astragalus praelongus</i>	34	Common chicory	99
		Common chokecherry	25
Baby aster	77	Common sunflower	83
Bahia	88	<i>Corydalis aurea</i>	12
<i>Bahia dissecta</i>	88	<i>Cowania mexicana</i>	23
Banana yucca	2	Creeping thistle	96
Barberry	10	Crimson hedgehog	45
Beardlip penstemon	65	<i>Croton texensis</i>	40
Beardtongue	64	Curlycup gumweed	72
Bee spiderflower	15	<i>Cuscuta campestris</i>	56
<i>Berberis fremontii</i>	10		
Bigelow aster	79	Dakota verbena	60
Big sagebrush	93	<i>Dalea formosa</i>	30
Bitterweed	89	Datil yucca	2
Blanketflower	92	Deervetch	29
Blanketweed	63	Desert beauty	30
Blazing star	43	Devilscaw	68
Bluebonnet	26	Devil's hair	56
Blue elder	69	Dotted gayfeather	71
Blue flax	38	Doveweed	40
Broadleaf gumplant	72		
Broadleaf milkweed	55	<i>Echinocereus triglochidiatus</i>	45
Broom snakeweed	73	<i>Echinocereus viridiflorus</i>	44
Bullhead	39	Elderberry	69
Bullnettle	62	<i>Eriogonum umbellatum</i>	7
Burnut	39	Evening star	43
Butterflyweed	53		
Butterweed	94	<i>Fallugia paradoxa</i>	22
		False mallow	41
<i>Calochortus nuttalli</i>	1	Feather dalea	30
Caltrop	39	Felty groundsel	95
Canada thistle	96	<i>Fendlera rupicola</i>	17
Candelabrum cactus	47	Fendlerbush	17
Cane cholla	47	Field dodder	56
<i>Castilleja confusa</i>	67	Firewheel	92

INDEX

Flannel mullein	63	Lovevine	56
Fleur-de-lis	5	Lupine	26
Foxfire	58	<i>Lupinus argenteus</i>	26
Fremont cottonwood	6		
<i>Gaillardia pinnatifida</i>	92	<i>Mammillaria aggregata</i>	46
<i>Gaura coccinea</i>	53	Many-flowered gilia	57
<i>Gilia aggregata</i>	58	Matchbrush	73
<i>Gilia multiflora</i>	57	<i>Melilotus albus</i>	27
Goat dandelion	100	<i>Melilotus officinalis</i>	28
Goatsbeard	100	<i>Mentzelia pumila</i>	43
Golden corydalis	12	Milkvetch	35
Golden crownbeard	85	<i>Mirabilis multiflora</i>	8
Golden currant	18	<i>Monarda pectinata</i>	61
Goldenrod	74	Moonflower	43
Goldensmoke	12	Mound cactus	45
Goldenweed	75	Mountain snowberry	70
Goldweed	85	Mugwort	93
Green-flowered torch	44		
Green pitaya	44	Narrowleaf gromwell	59
<i>Grindelia squarrosa</i>	72	Narrowleaf sunflower	84
Groundsel	94	New Mexican locust	33
<i>Gutierrezia sarothrae</i>	73	New Mexico locust	33
		Nipple cactus	46
<i>Helianthus annuus</i>	83	<i>Oenothera caespitosa</i>	52
<i>Helianthus petiolaris</i>	84	<i>Oenothera hookeri</i>	50
Hollygrape	10	<i>Oenothera pallida</i>	51
<i>Hymenoxys acaulis</i>	89	<i>Opuntia compressa</i>	48
<i>Hymenoxys argentea</i>	91	<i>Opuntia imbricata</i>	47
<i>Hymenoxys richardsonii</i>	90	<i>Opuntia rhodantha</i>	49
		<i>Oxytropis lambertii</i>	36
Indigobush	30		
<i>Iris missouriensis</i>	5	Paintbrush	67
		Painted cup	67
Juneberry	21	Pale evening primrose	51
Juniper globemallow	42	Palmer penstemon	64
Juniper mistletoe..... (facing introduction)		Paper daisy	87
Lambert crazyweed	36	Pea bush	30
Lambert's loco	36	Peavine	37
<i>Lathyrus eucosmus</i>	37	<i>Penstemon barbatus</i>	65
<i>Lepidium medium</i>	14	<i>Penstemon palmeri</i>	64
Lewis flax	38	<i>Penstemon whippleanus</i>	66
<i>Liatris punctata</i>	71	Pepperweed	14
<i>Linum lewisii</i>	38	Perky Sue	91
<i>Lithospermum incisum</i>	59	<i>Petalostemum candidum</i>	31
Loco	34	<i>Petalostemum purpureum</i>	32
Locoweed	34	<i>Phoradendron juniperinum</i> (facing introduction)	
Lotus	29	Pingue bitterweed	90
<i>Lotus wrightii</i>	29	Pingwing	90
		Pink gilia	58

INDEX

Plains beebalm	61	Silverleaf nightshade	62
Plains gaura	53	Skyrocket	58
Plains zinnia	80	Slender gaillardia	92
Poison milkweed	54	Smooth mountain pricklypear.....	48
Poison vetch	34	Snake-lily	5
<i>Polanisia trachysperma</i>	16	Soapweed yucca	3
<i>Populus fremontii</i>	6	Soft globemallow	41
Prairie flax	38	<i>Solanum elaeagnifolium</i>	62
Prairie sunflower	84	<i>Solidago canadensis</i>	74
Pricklepoppy	11	<i>Sphaeralcea digitata</i>	42
Princesplume	13	<i>Sphaeralcea incana</i>	41
<i>Proboscidea parviflora</i>	68	<i>Stanleya pinnata</i>	13
<i>Prunus virginianus</i>	25	Star tulip	1
<i>Psilostrophe tagetina</i>	87	Stemless primrose	52
Puccoon	59	Stickleaf	43
Puncturevine	39	Stinking clover	15
Purple prairieclover	32	Straightstem loco	34
		Strangleweed	56
Ragleaf	88	Succory	99
Ragwort	94	Sulphurflower	7
<i>Ratibida columnaris</i>	82	Sun drops	51
<i>Ratibida tagetes</i>	81	Sweet William	60
Rattleweed	34	<i>Symphoricarpos oreophilus</i>	70
Red penstemon	65		
<i>Ribes aureum</i>	18	Tansy aster	79
<i>Ribes leptanthum</i>	19	Tansybush	20
<i>Robinia neomexicana</i>	33	Texas croton	40
Rockrose	52	<i>Thelesperma megapotamicum</i>	86
Rocky Mountain beeplant.....	15	Threadleaf groundsel	95
Rocky Mountain iris.....	5	<i>Tribulus terrestris</i>	39
Rocky Mountain zinnia.....	80	<i>Trogopogon dubius</i>	100
<i>Rosa woodsii</i>	24	Trumpet gooseberry	19
Rose-of-Sharon	41	Trumpet phlox	58
Roughseed clammyweed	16	Tuberous pricklypear	48
Rubber rabbitbrush	76	Tufted eveningprimrose	52
Salsify	100	Unicornplant	68
<i>Sambucus glauca</i>	69	Upright prairie-coneflower	82
Sandlily	52	Utah agave	4
Scarlet bugler	65		
Scarlet gaura	53	<i>Verbascum thapsus</i>	63
Scarlet gilia	58	<i>Verbena bipinnatifida</i>	60
Sego lily	1	<i>Verbesina encelioides</i>	85
<i>Senecio longilobus</i>	95	Vervain	60
<i>Senecio multicapitatus</i>	94	Virgin's bower	9
Serviceberry	21		
Shadberry	21	Walkingstick cholla	47
Shadblow	21	Water flag	5
Shortray prairie-coneflower	81	Wavyleaf wildbuckwheat	7
Silkweed	55		

INDEX

Whipple beardtongue	66	Wormwood	93
White aster	78	Yellow daisy	75
White horsemint	61	Yellow-flowered evening-primrose	50
White horenettle	62	Yellow mentzelia	43
White prairieclover	31	Yellow-spined thistle	97
White sweetclover	27	Yellow sweetclover	28
Wild hollyhock	41	<i>Yucca baccata</i>	2
Wild rose	24	<i>Yucca baileyi</i>	3
Woods rose	24	<i>Zinnia grandiflora</i>	80
Woolly mullein	63		
Woolly paperflower	87		

**This book is published in cooperation with the National Park Service
by the**

SOUTHWEST PARKS AND MONUMENTS ASSOCIATION

*which is a non-profit distributing organization pledged to aid in the
preservation and interpretation of Southwestern features
of outstanding national interest.*

The Association lists for sale many interesting and excellent publications for adults and children and hundreds of color slides on Southwestern subjects.

We recommend, for example, the following titles we publish on the natural history of the Southwest:

FLOWERS OF THE SOUTHWEST DESERTS. Dodge and Janish. More than 140 of the most interesting and common desert plants beautifully drawn in 100 plates, with descriptive text. 112 pp., color cover, paper.....**\$1.00**

FLOWERS OF THE SOUTHWEST MESAS. Patraw and Janish. Companion volume to the Desert flowers booklet, but covering the plants of the plateau country of the Southwest. 112 pp., color cover, paper.....**\$1.00**

FLOWERS OF THE SOUTHWEST MOUNTAINS. Arnberger and Janish. Descriptions and illustrations of plants and trees of the southern Rocky Mountains and other Southwestern ranges above 7,000 feet elevation. 112 pp., color cover, paper.....**\$1.00**

100 DESERT WILDFLOWERS IN NATURAL COLOR. Dodge. Descriptions and full-color portraits of 100 of the most interesting desert wildflowers. Photographic hints. 64 pp., full-color cover, paper.....**\$1.50**

POISONOUS DWELLERS OF THE DESERT. Dodge. Invaluable handbook for any person living in the desert. Tells the facts about dangerous insects, snakes, etc., giving treatment for bites and stings and dispels myths about harmless creatures mistakenly believed poisonous. 48 pp.**\$.60**

MAMMALS OF THE SOUTHWEST DESERTS (formerly *Animals of the Southwest Deserts*). Olin and Cannon. Handsome illustrations, full descriptions, and life habits of the 42 most interesting and common mammals, members of the strange animal population of the lower desert country of the Southwest below the 4,500-foot elevation. 112 pp., 60 illustrations, color cover, paper.....**\$1.00**

MAMMALS OF SOUTHWEST MOUNTAINS AND MESAS. Olin and Bierly. Companion volume to *Mammals of Southwest Deserts*. Fully illustrated in exquisitely done line and scratchboard drawings, and written in Olin's masterfully lucid style. Gives description, ranges, and life habits of the better known Southwestern mammals of the uplands. Color cover, paper**\$2.00**
Cloth**\$3.25**

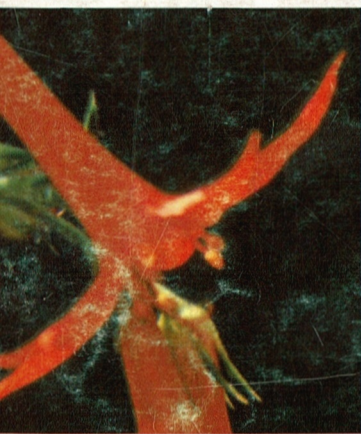
YOUR NATIONAL PARK SYSTEM IN THE SOUTHWEST, IN WORDS AND COLOR. Jackson. 500 word articles on each National Park Service area in the huge Southwest Region, with full-color photographs for 54 of the 56 areas listed. Most authoritative treatment possible, by 32-year former career N.P.S. employee, with every text checked for accuracy by Regional Office and each area's superintendent. Also contains "How to Get There" appendix. 64 pages, 56 full-color illustrations, color cover, paper**\$1.95**

Write For Catalog

**SOUTHWEST PARKS AND
MONUMENTS ASSOCIATION**

Box 1562 — Globe, Arizona 85501





Natt N. Dodge has done it again! The author and photographer of **100 Desert Wildflowers in Natural Color** has come up with another curtain-raiser on Southwestern flowers. In this companion volume he deals in the same fascinating manner with **100 roadside wild flowers** commonly met in **uplands of the Southwest**, again in full color. Much of this upland paradise lies between 4,500 and 7,500 feet altitude. It is nearly covered, or once was, with pigmy forests of pinyon and juniper trees, the latter popularly but erroneously called "cedar."

For many years regional naturalist for the Southwest Region, National Park Service, and author of such favorites as **Poisonous Dwellers of the Desert**, **Flowers of the Southwest Deserts**, and of many nature and travel articles in national and regional periodicals, Mr. Dodge knows "whereof he speaks," in addition to being a first-rate photographer.